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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,001	09/05/2003	Ravi Narasimhan	MP0256	7519
26200	7590	07/13/2005	EXAMINER	
FISH & RICHARDSON P.C. P.O BOX 1022 MINNEAPOLIS, MN 55440-1022			VU, THAI	
			ART UNIT	PAPER NUMBER
			2687	
DATE MAILED: 07/13/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/656,001	NARASIMHAN, RAVI	
	Examiner	Art Unit	
	Thai N. Vu	2687	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10, 12-19, 21, 23-30, 32, 34-41, 43, 45-52, and 54 is/are rejected.
- 7) ☒ Claim(s) 9, 11, 20, 22, 31, 33, 42, 44, 53, and 55 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>09/05/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The references cited in Information Disclosure Statement filed on September 05, 2003 have been considered, by the examiner (see attached PTO 1449 form or PTO/SB08A and 08B forms).

Claim Objections

2. Claim 1 is objected to because of the following informalities: the article "an" in the fourth line of the claim should be "a". Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-8, 10, 12-19, 21, 23-30, 32, 34-41, 43, 45-52, and 54 are rejected under 35 U.S.C. 102(e) as being anticipated by Malaender (U.S. Publication: 2003/0223391; hereinafter "Malaender").

Regarding claims 1, Malaender teaches a multi-element antenna wireless communication method comprising:

selecting a subset of active antennas from a plurality of available antennas in an multi-element antenna system based on higher-order statistics of a propagation medium (paragraphs [0043]-[0051] , claims 4 and 5 – antennas are selected based on second order statistics).

Regarding claim 12, Malaender teaches an apparatus (FIG. 1B) comprising: a processor (FIG. 1B, processor 140) operative to select a subset of active antennas from a plurality of available antennas based on higher-order statistics of a propagation medium (paragraphs [0043]-[0051] – antennas are selected based on second order statistics).

Regarding claim 23, Malaender teaches an apparatus (FIG. 1B) comprising: a processor including means (FIG. 1B, processor 140) for selecting a subset of active antennas from a plurality of available antennas based on higher-order statistics of a propagation medium (paragraphs [0043]-[0051]; claims 4-5 – antennas are selected based on second order statistics).

Regarding claim 34, Malaender teaches a system comprising:

a propagation medium (FIG. 1A, medium 130);

a first transceiver including a plurality of available antennas (FIG. 1A antennas 111a-m);

a second transceiver including

a plurality of available antennas (FIG. 1A; antennas 121a-n).

a processor (FIG. 1B processor 140) operative to determine second-order statistics of the propagation medium from signals received from the plurality of available antennas at first transceiver (paragraph [0047]; claim 5); and

an antenna selection module operative to select a subset of active antennas from the plurality of available antennas based on second-order statistics propagation medium (paragraphs [0043]-[0051]; claims 4-5).

Regarding claim 45, Malaender teaches a computer program comprising the steps of:

selecting a subset of active antennas from a plurality of available antennas in an multi-element antenna system based on higher-order statistics of a propagation medium (paragraphs [0043]-[0051] , claims 4 and 5 – antennas are selected based on second order statistics).

Regarding claim 2, 13, 24, 35, 46, Malaender further teaches limitations of the claim in paragraph [0047].

Regarding claim 3, 14, 25, 36, and 47, Malaender further teaches limitations of the claim in the abstract.

Regarding claim 4, 15, 26, 37, 48, Malaender further teaches limitations of the claim in the abstract.

Regarding claim 5, 16, 27, 38, 49, Malaender further teaches limitations of the claim in paragraph [0016].

Regarding claim 6, 17, 28, 39, 50, Malaender further teaches limitations of the claim in paragraph [0047].

Regarding claim 7, 18, 29, 40, 51, Malaender further teaches limitations of the claim in paragraph [0004].

Regarding claim 8, 19, 30, 41, 52, Malaender further teaches limitations of the claim in paragraph [0018].

Regarding claim 10, 21, 32, 43, 54 Malaender further teaches limitations of the claim in paragraph [0052]-[0053] (antennas inherently transmits at the same power level).

Allowable Subject Matter

5. Claims 9, 11, 20, 22, 31, 33, 42, 44, 53, and 55 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai N. Vu whose telephone number is 571-272-7928. The examiner can normally be reached on 9:00AM-7:00PM, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on 571-272-7922. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thai N. Vu
Examiner
Art Unit 2687


7/11/05
LESTER G. KINCAID
PRIMARY EXAMINER